

## **ITS Technical Bulletin 236**

### **CICS ABEND-AID / FX RELEASE 1.2**

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CICS Abend-Aid / FX is a fault diagnostic tool that provides a full range of analysis functions for managing CICS region outages and abnormal CICS transaction terminations (abends). This technical bulletin deals primarily with transaction abend processing. CICS Abend-Aid / FX also contains a notification facility where selected users can be notified via MVS SEND whenever specific abends occur. In addition, its security function can restrict user access to selected abend dumps and product options. For more information see Product Usage and Restrictions below. Information Technology Services (ITS) plans to implement CICS Abend-Aid / FX April 1, 1996.

#### **SOFTWARE SUMMARY**

The product provides full-text and abbreviated-text diagnostic summaries, a sophisticated set of analysis functions, and the latest navigation techniques for accessing CICS dumps. It helps application programmers analyze the causes of abnormal CICS transaction terminations. In addition, it helps systems programmers analyze the causes of CICS region dumps, including SVC dumps, SYSMDUMPS, SLIP dumps, and fast dumps.

The architecture of CICS Abend-Aid / FX consists of three major components:

- A dump capture component
- A server task
- A viewing access.

#### **Dump Capture Component**

For transaction dumps, the dump capture component consists of a transaction dump interface and an MVS subtask.

The transaction dump interface is a CICS dump domain exit and replaces the pointer to the CICS dump control program, DFHDCP. The interface determines whether CICS Abend-Aid / FX is to process a transaction abend, and, if so, passes control to an MVS subtask. It will not process an abend if any of the following situations exist:

CICS Abend-Aid / FX is currently processing an abend for the same task.

The abend is a duplicate of a previous abend.

The abend matches an exception condition for which ITS has specified dumps are not to be taken.

CICS is in the process of shutting down.

The MVS subtask's function is to process an abend. After the subtask is given control, it gathers information about the abend, such as diagnostics, last 3270 screen image, and control block information. The subtask then writes the dump information it has gathered to a transaction report file.

## Server Task

The server is the MVS address space that controls operation of CICS Abend-Aid / FX. It must be active to display transaction abend information, although it does not have to be active for CICS Abend-Aid / FX to capture transaction dumps.

## Viewing Access

The viewing access method provides the user interface to the server. While other access methods are possible, ITS has chosen to use CICS as the access method for state agencies. To view a transaction dump, a user must logon to CICS.

## Product Functions

CICS Abend-Aid / FX provides dump navigation and diagnostic functions to help identify the problems that produce CICS transaction abends. Some of these functions are always available, regardless of whether you have selected a dump to analyze. Collectively, they are referred to as dump-independent functions. The remaining functions are available only after you have selected a dump to analyze and are referred to as transaction abend analysis functions.

## Dump-Independent Functions

The following functions are available even when no dump is selected:

CICS Abend-Aid / FX Directory — Lists the number of transaction, region, and non-CICS dumps for each region.

Dataset Import — The import function makes region dumps available to CICS Abend-Aid / FX.

User Control Facility — Provides a wide range of administrative features that enable you to tailor the user interface.

Source Directory — Displays the source listings that have been written to a source support dataset.

## Transaction Abend Analysis Functions

Once you select a dump, CICS Abend-Aid / FX displays a primary options menu listing the following functions:

**Diagnostic Summary** — CICS Abend-Aid / FX conducts a thorough analysis of transaction abends and then produces a diagnostic summary to help you determine the cause of the transaction failure.

**Program Information** — This function identifies all programs involved in an abending task. It also provides direct access to specific program information such as COBOL linkage, COBOL external data, and program storage.

**CICS Trace** — You can display internal CICS trace information for an abending task in IBM format.

**Terminal Detail** — This screen provides terminal-related information for the terminal associated with the task at the time of the abend.

**Task Detail** — This function provides a detailed analysis of the selected task at the time of the transaction abend.

**Control Blocks/Storage** — The Control Blocks/Storage screen lists the control blocks related to the failing transaction. It also provides access to the dump's hexadecimal storage. In addition, its paperclip function tracks your navigation through storage.

**File Request Summary** — The summary lists all files with areas remaining on the storage chain for the abending transaction. For each file, detailed statistics are available, including information on file access and file requests.

**Last 3270 Screen** — This function redisplay the exact screen image displayed when the abend occurred.

**Duplicate History** — CICS Abend-Aid / FX suppresses duplicate transaction dumps. This allows you to track recurring transaction failures without having to store information.

## General Features

CICS Abend-Aid / FX has several features that enhance its analysis capabilities:

Tab-selectable fields that display control blocks in interpreted, hexadecimal, or DSECT format, or that display additional related information.

Extensive print capabilities that allow you to print individual screens, groups of screens, formatted DSECTs, and storage.

Screen attributes you can customize to change screen colors, to turn screen borders on or off, to turn reverse videos on or off, and to show or hide line commands and screen footer information.

A FIND command that is available on all scrollable screens, including storage displays.

A facility that allows you to define your own control blocks to the system, so that CICS Abend-Aid / FX can display them in DSECT format.

## PRODUCT USAGE AND RESTRICTIONS

For assistance with use of CICS Abend-Aid / FX or set up of dump notification, contact ITS CICS support at (801) 538-3179.

To access the CICS Abend-Aid / FX Directory enter transaction AADF within the CICS region in which the abend occurred. Place your cursor next to the abend's dump directory entry and press ENTER. The dump's Primary Option menu will be displayed.

Select the desired dump information option from the option field. Option U, or the "USER" fastpath command displays the User Controls menu where individual customization may be performed. Note: The CUSTOM option of User Controls may only be available to members of ITS CICS support.

### Dump Notification

CICS Abend-Aid / FX can be customized so that one or more users are notified when a transaction dump is taken. CICS Abend-Aid / FX submits a batch job that uses the MVS SEND command to notify TSO users. To be notified when one of your transactions abends contact ITS CICS support.

### Security Considerations

CICS Abend-Aid / FX uses an interface to standard external security packages (ACF/2) to restrict user access to CICS Abend-Aid / FX information and functions.

The DIRCMDS subparameter of the EXTERNAL\_SECURITY server configuration parameter controls access to specific directory entries (dumps/reports) in transaction report files. Using DIRCMDS, external security rules are written that govern the specific CICS Abend-Aid / FX directory line commands users can issue, and for which transaction dump entries.

This is possible because CICS Abend-Aid / FX generates pseudo-dataset names for directory entries based on CICS region name, tranid, and line command. Users are then given security access to these pseudo-dataset names.

For example:

Transactions ABCD and EFGH execute in CICSX. User Kurt is responsible for transaction ABCD while user Kathy is responsible for transaction EFGH. User Vaughn may view dumps for either transaction but may not delete them. CICS Abend-Aid / FX generates the following

pseudo-dataset names when both transactionsabend:

AAFX.DDIRTR.SERVER1.CICSX.ABCD  
AAFX.DDIRTD.SERVER1.CICSX.ABCD  
AAFX.DDIRTR.SERVER1.CICSX.EFGH  
AAFX.DDIRTD.SERVER1.CICSX.EFGH

AAFX is a predetermined high level qualifier. DDIRTx is the line command function value where x is the line command, in this example R for READ and D for DELETE. SERVER1 is the executing server, followed by the applicable CICS region and transaction ID.

User Kurt is given ACF/2 read access to the first two dataset names; user Kathy is given access to the last two; user Vaughn is given access to the first and third dataset names. Thus, Kurt may view or delete any dump entries for transaction ABCD, but not for transaction EFGH. Conversely, Kathy may view or delete dump entries for transaction EFGH but not ABCD. Vaughn may view dumps for either transaction. However, he can not delete them.